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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,478	05/29/2001	Yui-Whei Chen-Yang	041781-5016	3489
9629	7590	05/25/2004	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			WILLS, MONIQUE M	
			ART UNIT	PAPER NUMBER
			1746	
DATE MAILED: 05/25/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/865,478

Applicant(s)

CHEN-YANG ET AL.

Examiner

Monique M Wills

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

DETAILED ACTION

*Response to Amendment*

This Office Action is responsive to the Amendment filed March 16, 2004. The rejection of claims 1,2,5,6,7 & 8 under 35 U.S.C. §102(b) as being anticipated by Kumar et al., U.S. Patent 5,695,873, is overcome. The rejection of claims 1-4, 7-11 & 14 under 35 U.S.C. §102(b) as being anticipated by Coltrain et al., U.S. Patent 5,010,128, is overcome. Claims 2-12 & 14 are cancelled. Upon further consideration, the allowable subject matter indicated in the previous office action has been withdrawn, and new grounds of rejection are made as follows:

- Claims 1 & 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.
- Claims 1 & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. U.S. Patent 6,001,509.

*Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 & 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the

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claimed invention. The specification does not provide support for “a ceramic filler having recurrent units, each of which includes a backbone chain selected from a group consisting of -P=N- group and a -C-C- group, and at least a side chain linked to said backbone chain and containing at least one coordination potential atom selected from a group consisting of an alkoxy group and a C≡N group”. *In short, there is no support for “a ceramic filler having recurrent units”.*

It is suggested that Applicant replace “having recurring units” with “wherein said branched polymer has recurrent units”, to overcome the rejection.

#### *Claim Interpretation*

The Examiner assumes that the “recurrent units” limitations further define the general amorphous branched polymer. Therefore, claim 1 is interpreted as polyacrylonitrile having recurrent units.

#### *Claim Rejections ~ 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

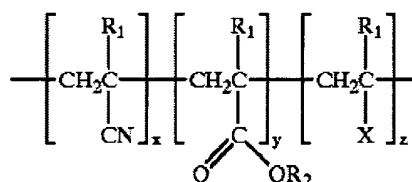
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al.

U.S. Patent 6,001,509.

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Kim teaches a solid polymer electrolyte comprising a polymer (A), liquid electrolyte (B) composed of a lithium salt and aprotic solvent, and ceramic filler (C). See abstract. With respect to claim 1, the electrolyte comprises: 10-90 weight % of polyacrylonitrile-methyl methacrylate-styrene (col. 3, lines 15-22); 10-90 weight % of lithium perchlorate and an aprotic solvent (col. 3, lines 15-25 & Table 2), embracing 27-50 weight % lithium perchlorate; and 5-40 weight% of alumina (col. 7, lines 35-45). At column 7, lines 1-10, polyacrylonitrile-methyl methacrylate-styrene has the formula:



illustrating recurrent units (x) and (y), each including a -C-C- group backbone chain, and respectively linked to a side chain containing a  $\text{C}\equiv\text{N}$  group in unit (x), and an alkoxy group in unit (y).

Regarding claim 13, the electrolyte comprises: 10-90 weight % of polyacrylonitrile-methyl methacrylate-styrene (col. 5, lines 15-22), embracing 47-60 weight % polyacrylonitrile; 10-90 weight % of lithium perchlorate and an aprotic solvent (col. 3, lines 15-25 & Table 2), embracing 35 to 45 weight % lithium perchlorate; and 5-40 weight % of alumina, embracing 5 to 8 weight % ceramic filler (col. 7, lines 35-45).

The instant claims are anticipated by the prior art set forth. The limitation in claim 1, with respect to the salt being an amphoteric metal salt forming Lewis acid-base interactions with side chains of the branched polymer, is considered to be an inherent property of the salt set forth in the prior art, because Kim employs the same lithium perchlorate salt set forth by

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Applicant. The limitation in claim 1, with respect to electrolyte comprising  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>, is considered to be an inherent property of alumina as set forth in the prior art, because alumina in its natural form exists as  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> (See page 3 of [www.chemical1and21.com](http://www.chemical1and21.com), attached herewith). The limitation in claim 1, with respect to the ceramic filler being a Lewis acid-base forming Lewis acid-base interactions with the metal salt and side chains of the polymer, is considered to be an inherent property of the ceramic filler as set forth in the prior art, because Kim employs the same  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> set forth by Applicant.

### *Response to Arguments*

Applicant's arguments, with respect to anticipation of claims 1,2,5,6,7 & 8 by Kumar '873, have been fully considered and are persuasive. Specifically, Applicant asserts that Kumar is not anticipatory because the reference is silent to weight percents of the polymer, metal salt and ceramic filler. The assertion is correct and the rejection is withdrawn. However, upon further consideration, a new ground(s) of rejection of claim 1 is made in view of Kim et al., U.S. Patent 6,001,509. Claims 2 & 5-7 have been cancelled.

Applicant's arguments, with respect to anticipation of claims 1-4,7-11 & 14 by Coltrain '128, have been fully considered and are persuasive. Specifically, Applicant asserts that Coltrain is not anticipatory because the reference is silent to weight percents of the polymer, metal salt and ceramic filler. The assertion is correct and the rejection is overcome. However, upon further consideration, a new ground(s) of rejection of claim 1 is made in view of Kim et al., U.S. Patent 6,001,509. Claims 2-4, 7-11 & 14 have been cancelled.

The allowability of claim 13 is withdrawn, and a new ground(s) of rejection is made in view of Kim et al., U.S. Patent 6,001,509.

*Conclusion*

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

05/22/04

  
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PRIMARY EXAMINER  
GROUP 1746